

REMARKS

Claims 1-11 are pending in this application. Claim 1 has been amended. No new matter has been added. Favorable reconsideration of this application, as presently amended, and in light of the following discussion, is respectfully requested.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Covington, et al., U.S. Patent No. 4,502,938 (hereinafter "Covington"), in view of Applicants' related art ("ARA") as disclosed on page 4, lines 28-30 and page 5, lines 1-16 of the instant application.

Independent claim 1 has been amended to set forth the a-WO₃ layer being formed by RF-sputtering, see page 11, lines 16 to 17 of the specification, and Figs. 6-11 for support thereof.

It is respectfully submitted that claim 1, as amended, is allowable over Covington and ARA, individually or in combination. It is noted that the description on page 4, lines 28-30 and page 5, lines 1-16 of the instant application was not viewed as ARA until this outstanding Action.

The Abstract of Covington teaches a field-effect transistor (FET) transducer device that includes a semiconductor substrate (3), an electrical insulator (6) and/or ion-barrier material (7) overlying the semiconductor substrate (3). An electroactive material (10) overlies said insulator and/or ion-barrier (7). A source/drain (1, 2) is formed in the semiconductor substrate beside the ion-selective membrane. A metal wire is formed on the source/drain and a sealing layer (11) overlays the metal wire, exposing the ion-selective membrane layer.

Therefore, Covington teaches a modification of conventional ISFET structure, but fails to teach or suggest any amorphous tungsten oxide formed by RF-sputtering overlying the gate oxide layer.

As mentioned on page 5, lines 19-23 of the specification, the composition of WO_3 layer is hard to control regardless of which method is used. Conventionally, the composition of WO_3 layer is performed by vacuum evaporation, which is hard to control, and the surface of WO_3 layer is not uniform.

On the other hand, the amended claim 1 recites an amorphous WO_3 (a- WO_3) gated ion sensitive field effect transistor (ISFET), wherein the a- WO_3 gate is formed by RF- sputtering. The detecting capability of the ISFET is based on the a- WO_3 gate. The properties and electrical characteristics of a- WO_3 gate are critical, and vary with formation methods. Indeed, Figs. 6-11 of the instant application show the superior sensitivity and stability of the RF-sputtered amorphous WO_3 gated ISFET in various aqueous samples, and indicate that amorphous WO_3 formed by RF-sputtering is uniform and superior as a sensing gate material for the ion sensitive field effect transistor (ISFET).

In short, amorphous tungsten oxide formed by RF-sputtering, as now recited in independent claim 1, is not disclosed in any of the references cited by the Examiner. Since Covington and ARA, either alone or in combination, fail to teach or suggest every limitation of the claimed invention, Applicants respectfully submit that amended claim 1 is allowable over the cited references.

Since claims 2-11 depend either directly or indirectly from claim 1, Applicants respectfully submit that claims 2-11 are also allowable, for at least the reasons cited above.

In view of the amendments to the claims and the remarks set forth above distinguishing the claimed invention from the cited prior art references, Applicants submit that the Examiner's rejections have been overcome. It is therefore respectfully requested that the Examiner withdraw the rejections and allow the present claims.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 50-2394.

Respectfully submitted,

IPS, Inc.



Robert J. Forsell, Jr.
Reg. No. 51,693

Customer No. **34003**
5717 Colfax Avenue
Alexandria, VA 22311
Tel: (703) 379-9625
Fax: (703) 379-9628
RJF/km